



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,143	10/14/2004	Daisuke Uchida	4770-0103PUS1	1981

2292 7590 07/26/2006

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

LAM, CATHY FONG FONG

ART UNIT PAPER NUMBER

1775

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/511,143	Applicant(s) UCHIDA ET AL.	
	Examiner Cathy Lam	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on April 25th 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

In view of the amendment and remarks filed on April 25th 2006, the pending claims continue to be unpatentable as following:

Claim Objections

1. Claim 10 is objected to because of the following informalities: applicant is suggested to change “or” to – and – in line 4, as “...selected from the group consisting of A, B, and C”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 11, the phrase “said components” lacks antecedent basis.

Claim Rejections - 35 USC § 102

3. Claims 1-4, 6-10, 12 and 17-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Oishi et al (US 6676920).

Oishi discloses a flame retardant resin composition comprised of a resin material, flame retardant magnesium hydroxide particles, curing agent and an organic solvent. The flame retardant magnesium hydroxide particles have a primary particle diameter and an aspect ratio within the claimed range (see Ex A1, Ex 3 & Ex 4, Tables 1 & 2, col 13 & 14). The particles have an average secondary particle diameter in the range of 0.15 to 5 μm (col 3 L 66- col 4 L 2 L 19-21).

The magnesium hydroxide particles are surface treated before use. A surface treating agent of higher fatty acids with at 10 C atoms includes a phosphorus compound

Art Unit: 1775

and an organosilane material, etc. is used to treat the flame retardant particles (col 5 L 35-48 & col 5 L 50-67).

An additional flame retardant aid such as red phosphorus is incorporated in the flame retardant resin composition (col 10 L 22-29). The examiner is taking the position that the red phosphorus resembles the claimed phosphorus-containing compound as dispersible solid particles because this red phosphorus can replace some amount of the magnesium hydroxide particles.

The resin material can be a polyolefin polymer, a diallyl phthalate resin, an epoxy resin, a melamine resin, etc. (col 9 L 42-66). Additive such as crosslinking agent (or curing agent) can be added to the resin material (col 10 L 50-57). The resin material, the MgO particles and the curing agent are all added to water (or solvent) (col 11 L 26-27).

Oishi further teaches that the flame retardant resin composition can be formed into a molded article (col 10 L 59-60).

4. Claims 1-4, 9, 12-14 and 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al (US 6319619).

Yamamoto discloses a resin composition for used in electronic devices. The resin composition is comprised of a thermosetting resin, a hardening agent, and a metal hydroxide compound (col 2 L 56-60). The resin composition is flame resistant (col 3 L 33).

The metal hydroxide compound is in crystal form and has an average particle diameter from 0.5 μm to 10 μm and an aspect ratio from 2-7 (col 3 L 61 & col 4 L 1-2).

Art Unit: 1775

The metal hydroxide compound is an excellent flame retardant (col 3 L 59-col 4 L 2).

The particles are surface treated with a phosphorus compound (col 7 L 60- col 8 L 8).

Yamamoto further teaches a red phosphorus powder is preferably added to the metal hydroxide resin composition (col 7 L 46-50 & col 8 L 5-7).

The thermosetting resin can be an epoxy resin (col 8 L 19-21). The resin composition is dispersed in a solvent (col 7 L 58-64).

Yamamoto's resin composition is formed into a sheet by molding (col 8 L 60-67).

5. Claims 1, 3-4, 6, 8-9, 12-13, 17-25 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Imahashi et al (US 6130282).

Imahashi discloses a flame retardant resin composition which contains no halogen, is comprised of a flame retardant magnesium hydroxide particles and aluminum hydroxide particles, a synthetic resin, a curing agent and a solvent.

The flame retardant magnesium hydroxide and aluminum hydroxide particles are added to the resin and are surface treated with a phosphorus compound and and a silane coupling agent (col 5 L 18-49). The flame retardant resin composition may further contains red phosphorus powder (col 6 L 27-28). The particles has an averageing secondary particle diameter of 0.4-4 μm (col 4 L 43).

A surface treating agent which includes higher fatty acids of 10 or more C atoms such as alkali metal salts and amine salts of phosphoric acids is used to treat the particles (col 5 L 28-33).

The synthetic resin can be an olefin polymer, an epoxy resin, a melamine resin, etc. (col 6 L 47-61). The solvent is an organic solvent such as a triethanolamine solvent

Art Unit: 1775

(col 10 L 6-7). The resin composition is cured to form a plate shape article (col 16 L 40-41 & L 56).

The examiner is taking the position that the red phosphorus powder is dispersed within the resin composition and that the surface treating agent including alkali metal salts and amine of phosphoric acid is used as the phosphorus containing compound (col 5 L 28-33).

Claim Rejections - 35 USC § 103

6. Claims 1-4, 6-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oishi et al (US 6676920) or Yamamoto et al (US 6319619) or Imahashi et al (US 6130282).

All three cited prior art disclose a flame retardant resin composition which comprised of a flame retardant magnesium hydroxide particles, aluminum hydroxide particles and red phosphorus particles, a synthetic resin, a curing agent and a solvent.

The flame retardant particles are surface treated with a phosphorus compound and/or a silane compound, then dispersed into a synthetic resin material (col 5 L 18-49).

The synthetic resin can be an olefin polymer, an epoxy resin, a melamine resin, etc. (col 6 L 47-61). The solvent is an organic solvent such as a triethanolamine solvent (col 10 L 6-7).

All the prior art teach the flame retardant resin composition is molded to form a layer or a plate.

The prior art however is silent about the layer is used as an insulating layer for a PWB.

In view of the prior art teaching, one skill in the art would use the prior art layer for use in PWBs because it is conventional that substrates for printed wiring board are flame retardant.

Double Patenting

7. Claims 1-4, 6-25 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-6, 7-9, 13, 31-37 and 39-40 of copending Application No. 10/398,284. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are materially and structurally the same.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).


Response to Arguments

9. Applicant's arguments filed on April 25th 2006 have been fully considered but they are not persuasive. The examiner continues to rely on the prior art cited in the previous office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Cathy Lam
Primary Examiner
Art Unit 1775

Cfl
June 30, 2006